SITE INVESTIGATION

Master Metals

Holmden Road Site

Prepared for:

Mr. Dennis Reis

Prepared By:

ENTACT, Inc.
April 18, 1997

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1360 N. Wood Dale Road Wood Dale, Illinois 60191 (630) 616-2100

SITE INVESTIGATION

MASTER METALS

HOLMDEN ROAD SITE

ENTACT

April 18, 1997

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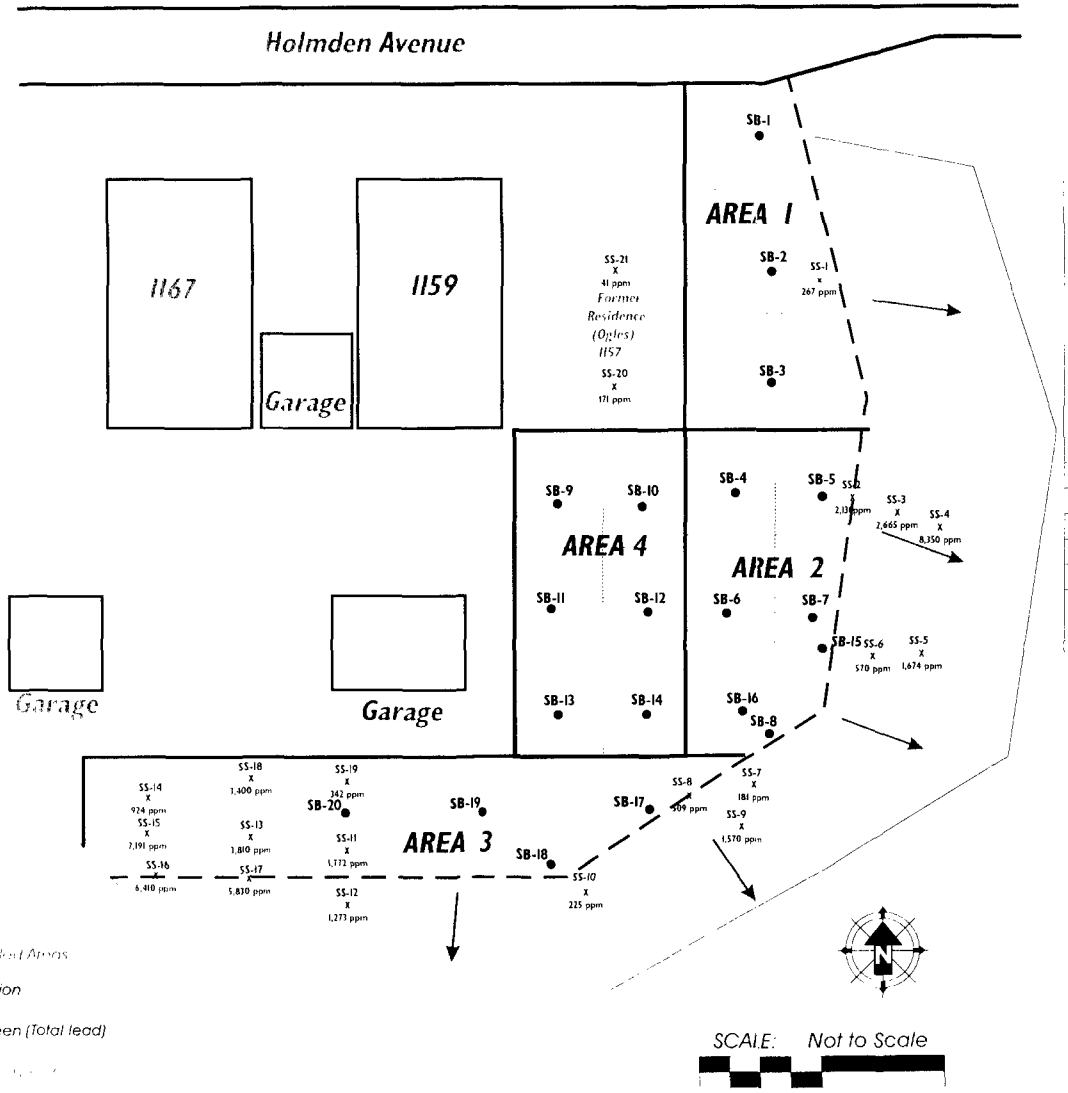
and

MASTER METALS
HOLMDEN ROAD SITE
Cleveland, Ohio

SITE MAP & SAMPLE LOCATIONS

ENTACT
April 10, 1997



AREA 1 = Previously Sampled Areas

SB-1 = Soil Boring Location

SS-1 x = Surface XRF Screen (Total lead)

RESULTS AT DEPTH (ppm Lead)

Sample I.D.	Surface	0-0.5'	0.5-1'	1-1.5'	1.5-2'	2-2.5'	2.5-3'	3-3.5'
SB-1	49	94	58	63	ND	37	112	
SB-2	453	0	805	31	105	Refusal		
SB-3	21.7	241	58	35	ND	22	346	
SB-4	558	700	43	21	138	169		
SB-5	1,698	1,863	296	23	ND	ND	465	122
SB-6	1,234	1,347	63	164	65	52	69	
SB-7	1,167	2,932	22	ND	ND	69		
SB-8	324	ND	45	ND	55	100	ND	
SB-9	506	151	78	122	80	27		
SB-10	495	465	77	44	42	18		
SB-11	151	149	25	274	ND	34	28	
SB-12	208	119	244	45	ND	509	502	59
SB-13	1,190	27	132	ND	43	64		
SB-14	2,278	156	137	46	393	96	32	
SB-15	2,423	3,810	ND	25	ND	ND		
SB-16	592	270	ND	112	88	275	34	
SB-17	775	1,288	162	374	84	82	74	
SB-18	1,796	1,892	1,170	22	ND	874	354	
SB-19	140	391	169	28	36	42	109	
SB-20	1,879	1,831	67	ND	88	137	157	

Section two

WORK SUMMARY FOR THE MASTER METALS, HOLMDEN AVENUE SITE INVESTIGATION

DAILY SUMMARY
APRIL 9, 1997

ENTACT crew on-site:
Dean Pisani
Rich Wood
Mike Welly

April 9, 1997- Clear, cold, and windy 30°F.

ENTACT crew arrives in Cleveland, Ohio, at 4:00 p.m. Materials and equipment are organized and ENTACT associates drive to 1157 Holmden Avenue.

At 4:35 p.m., ENTACT arrives at the property and makes a brief walk around the property. ENTACT leaves site to purchase necessary supplies to grid off sample areas.

At 5:45 p.m., ENTACT returns to the site to grid off the sampling areas and speaks with the former property owner of 1157 Holmden Avenue, Mr. Ogle.

At 6:00 p.m., using a 100 foot measuring tape, Rich and Mike mark off each of the four sample areas appropriately with respect to the area of each. Area 1 is marked off in approximate 25' x 25' grids. Area 2, approximate 20' x 20' grids. Area 3, approximate 40' x 30' grids. Area 4, approximate 20' x 25' grids. Area 3 is irregularly shaped and difficult to access due to the presence of debris and trees which resulted in the larger grid layout.

Twenty (20) boring locations were marked on the 0.3 acre property.

At 6:35 p.m., ENTACT associates depart the site.

WORK SUMMARY FOR THE MASTER METALS, HOLMDEN AVENUE SITE INVESTIGATION

DAILY SUMMARY
APRIL 10, 1997

ENTACT crew on-site:
Dean Pisani
Rich Wood
Mike Welly

Subcontractors:
GEO Environmental

April 10, 1997- clear and calm 30°F.

At 7:30 a.m., ENTACT crew and GEO crew arrive at 1157 Holmden Avenue. Rich standardizes the XRF analyzer.

At 7:40 a.m., ENTACT conducts the Site Health and Safety Meeting.

At 7:55 a.m., Rich takes the surface XRF reading of the first soil boring location (SB-1) and sampling activities commence using the Geoprobe®. Each soil sample is screened for total lead using the XRF at the surface and every six (6) inches to a minimum depth of three (3) feet. Mike logs and describes each sample and records the total lead readings manually in the Field Log Book and Rich records the total lead readings on computer.

At 11:50 a.m., ENTACT and GEO crews leave site for lunch.

At 12:40 p.m., ENTACT and GEO crews return from lunch and resume sampling activities.

At 4:20 p.m., the last soil boring is collected and screened. GEO leave site. Rich and Mike then take surface XRF readings at the locations where GEO could not access with the Geoprobe®. Twenty-one (21) surface readings were taken at the locations where the Geoprobe® could not access.

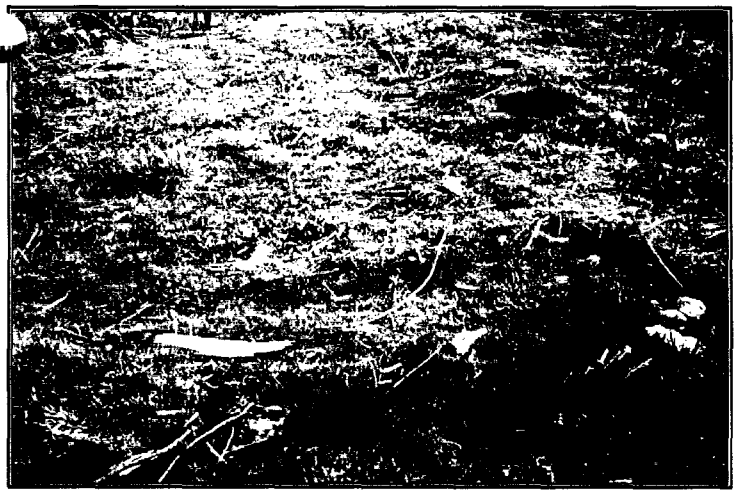
At 5:30 p.m., ENTACT associates depart the site.

three

Master Metals Holmden Road Site Sampling Activities

Initial site overview

Site survey and grid demarcation



Marked soil bore location

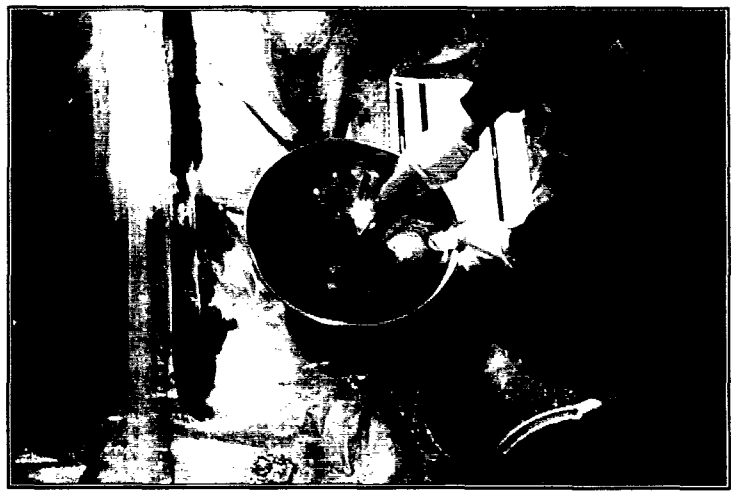
Preparation of bore location for XRF surface screen

XRF surface screen and data log entry

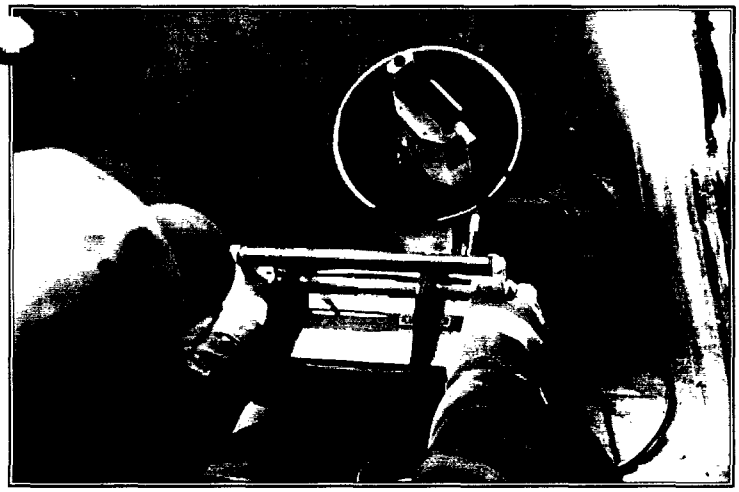
Sample preparation and analysis

Master Metals Holmden Road Site Sampling Activities

Sample identification storage in XRF



Soil preparation prior to XRF screening



Soil sample screening with XRF analyzer

Decontamination of equipment between sample collection activities

Grouted borehole upon completion

Surface screening in areas inaccessible to Geo-probe unit

Decon water and used PPE secured at Master Metals Industrial facility

MASTER METALS
Holmden Avenue Site
Soil Boring Results

Sample ID		SAMPLE DEPTH (feet)								LAB RESULTS (Pb in mg/kg)
		0	0-0.5	0.5-1.0	1.0-1.5	1.5-2.0	2.0-2.5	2.5-3.0	3.0-3.5	
		XRF READINGS (Pb in ppm)								
SB-1		49	94	58	**63***	0	37	112		260
SB-2		453	0	805	31	**105***				130
SB-3		21.7	241	58	**35***	0	22	346		47
SB-4		558	**700***	43	21	138	169			1300
SB-5		1,698	**1863***	296	23	0	0	465	122	7000
SB-6		1,234	**1347***	63	164	65	52	69		2100
SB-7		1,167	2,932	**22***	0	0	69			180
SB-8		324	**0***	45	0	55	100	0		430
SB-9		506	151	**78***	122	80	27			160
SB-10		495	465	77	44	42	**18***			56
SB-11		151	149	25	274	0	34	28		
SB-12		208	119	244	45	0	509	502	59	
SB-13		1,190	27	**132***	0	43	64			180
SB-14		2,278	156	137	46	393	96	32		
SB-15		2,423	**3810***	0	25	0	0			3000
SB-16		592	**270***	0	112	88	275	34		400
SB-17		775	**1288***	162	374	84	82	74		2200
SB-18		1,796	1,892	1,170	22	0	**874***	354		520
SB-19		140	**391***	169	28	36	42	109		230
SB-20		1,879	**1831***	67	0	88	137	157		850

*** - Denotes sample was submitted to lab.**

MASTER METALS
Holmden Avenue Site
Surface Sample Results

Sample ID	XRF Readings (Pb in ppm)
SS-1	267
SS-2	2,130
SS-3	2,665
SS-4	8,350
SS-5	570
SS-6	1,674
SS-7	181
SS-8	509
SS-9	1,570
SS-10	225
SS-11	1,772
SS-12	1,273
SS-13	3,810
SS-14	924
SS-15	2,191
SS-16	6,410
SS-17	5,830
SS-18	3,400
SS-19	342
SS-20	171
SS-21	41

CLIENT:Entact, Inc.
CLIENT PROJECT#:MASTER METALS
SITE:-
CLIENT P.O.#:-
IEA PROJECT#:L72971021
MATRIX:SOIL

METALS

LAB ID#	CLIENT ID	ANALYTE	RESULT	QUAL	PQL	UNITS	DIL. FACTOR	DATE DIGESTED	DATE ANALYZED	METHOD
L72971021-001	SB-1									
		Lead	260		3.2	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	82 Percent Solid								
L72971021-002	SB-2									
		Lead	130		2.8	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	89 Percent Solid								
L72971021-003	SB-3									
		Lead	47		2.8	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	88 Percent Solid								
L72971021-004	SB-4									
		Lead	1300		3.2	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	86 Percent Solid								
L72971021-005	SB-5									
		Lead	7000		2.9	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	85 Percent Solid								

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SITE:-
CLIENT P.O.#:-
IEA PROJECT#:L72971021
MATRIX:SOIL

METALS

LAB ID#	CLIENT ID	ANALYTE	RESULT	QUAL	PQL	UNITS	DIL. FACTOR	DATE DIGESTED	DATE ANALYZED	METHOD
L72971021-006	SB-6									
		Lead	2100		2.8	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	89 Percent Solid								
L72971021-007	SB-7									
		Lead	180		2.9	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	89 Percent Solid								
L72971021-008	SB-8									
		Lead	430		3.1	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	82 Percent Solid								
L72971021-009	SB-9									
		Lead	160		2.7	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	92 Percent Solid								
L72971021-010	SB-10									
		Lead	56		3.1	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	87 Percent Solid								

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SITE:-
CLIENT P.O.#:-
TEA PROJECT#:L72971021
MATRIX:SOIL

METALS

LAB ID#	CLIENT ID	ANALYTE	RESULT	QUAL	PQL	UNITS	DIL. FACTOR	DATE DIGESTED	DATE ANALYZED	METHOD
L72971021-011	SB-13									
		Lead	180		2.8	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	92 Percent Solid								
L72971021-012	SB-15									
		Lead	3000		2.8	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	89 Percent Solid								
L72971021-013	SB-16									
		Lead	400		3.1	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	85 Percent Solid								
L72971021-014	SB-17									
		Lead	2200		3.1	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	85 Percent Solid								
L72971021-015	SB-18									
		Lead	520		2.9	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	87 Percent Solid								

CLIENT:Entact, Inc.
CLIENT PROJECT#:MASTER METALS
SITE:-
CLIENT P.O.#:-
IEA PROJECT#:L72971021
MATRIX:SOIL

METALS

LAB ID#	CLIENT ID	ANALYTE	RESULT	QUAL	PQL	UNITS	DIL. FACTOR	DATE DIGESTED	DATE ANALYZED	METHOD
L72971021-016	SB-19									
		Lead	230		2.8	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	88 Percent Solid								
L72971021-017	SB-20									
		Lead	850		2.9	mg/kg	1	04/14/97	04/14/97	6010
	Date Sampled: 04/10/97	87 Percent Solid								

CONFIDENTIAL INFORMATION OF ENTACT

Entact uses proprietary technology in additive and treatment processing to achieve its fixation and permeability results. Patents have either been issued or are pending.